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among the adults, in which the pulse was excited, the heart enlarged and the temperature slightly above normal. There were over 30 per cent. of such cases among the younger and middle-aged adults among the Cheyenne River Sioux, and about the same proportion at Fort Yates, particularly in the vicinity of the Farm School. At first the symptoms were puzzling and attributed to rheumatism, excessive use of coffee, or tobacco; but it was soon seen that in most if not all cases they were connected with a greater or lesser thyroid enlargement, and eventually it became plain that they were due to the latter and were the symptoms of thyroid derangement.

The foremost question in this connection is, what are the causes of this localized prevalence of serious disturbances of the thyroid gland. It is not a tribal peculiarity, for other branches of the Sioux away from the river are less affected. There is no evidence that the disease extends for any great distance along the Missouri, or is common among the whites of same localities. The water used by the natives is mostly that of the Missouri and its small affluents. The present habits of these Indians are those of fairly civilized Indians in general. They were always hunters and great meat eaters, and are doubtless still more so than agricultural tribes, but this is true of all the Sioux. The country is of the rolling prairie type, the climate rigorous but not over-severe. Malarial infections are infrequent, but scrofula, consumption and venereal diseases prevail; all of which affords no clue as to the causes of the goiter.

It seems that here, if anywhere, in this country there is a good chance for a thorough investigation, by modern means, of the conditions leading to thyroid enlargement. The people concerned are very tractable, and both reservations are within easy reach of the railroad. The Bureau of Indian Affairs would doubtless favor and assist the investigations. In his visits to upwards of 50 tribes the writer has never met with a locality where the thyroid "infection" was as prevalent and active, and where conditions for research into its causes

In conclusion it may be added that goiter

among Indians is not, so far as the writer's experience goes, connected with cretinism, which seems not to occur at all in that race, or with myxedema, and only rarely and moderately with exophthalmia.

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#### COMPULSORY MATHEMATICS—AN EXPLANATION

TO THE EDITOR OF SCIENCE: Professor Keyser, in reviewing Professor Miller's "Historical Introduction to Mathematical Literature"<sup>1</sup> speaks of "the nation-wide depreciatory utterances of such educational leaders and agitators as Commissioner Snedden and Abraham Flexner" (relative to the value of the study of mathematics, I infer). I think he can not be fully informed as to my position.

My objection is merely against giving high-school mathematics a highly "protected" position, shared by no other subject except English, as we do now through college entrance requirements and the traditions controlling in secondary schools. I know (having been a moderately successful teacher of high-school mathematics myself for several years) that a substantial percentage of high-school pupils, otherwise of good ability and promise, do not respond well to mathematic teaching, and, I believe, do not materially profit from the assigned tasks, which are uninteresting, discouraging, and even, at times, obnoxious, to them. I think this is frequently the case with pupils of literary bent and artistic leanings.

I naturally very much favor the extended study (preferably under better teaching than we now obtain from the teachers prepared by our college departments of mathematics) of secondary school mathematics by all those anticipating vocational studies or pursuits where the results of such study serve a demonstrably instrumental purpose. Furthermore, I should strongly encourage other pupils to undertake these studies and to pursue them vigorously as long as they can be made to find the drill and the broadening outlook given by them interesting and, probably, fruitful.

<sup>1</sup> SCIENCE for July 7, 1916, pp. 25-28.

But I do not attach much weight to the pedagogical principle, succinctly stated by Dooley that "It doesn't matter what you teach a boy, so long as he doesn't like it." To give point to my attitude, I have frequently asked the question "Why should a girl be required to 'pass' in mathematics as a condition of entering an American college and (usually) of graduating from an American high school?" Is algebra, as usually taught, a subject of such unique educational excellence in general education, and does it in so exceptional a measure train the mind or give rise to the appreciations and insights which we call culture, that it should have the monopolistic position in our secondary schools which we now give it? To me this is an important question; and in asking it, I have no intention of depreciating the values, demonstrable or assumed, which that subject may still possess for a large proportion of the one million three hundred thousand pupils now found in our public high schools.

DAVID SNEDDEN

COLUMBIA UNIVERSITY,  
July 18, 1916

THE SOUTHERN BULLFROG, *RANA GRYLIO*  
STEJNEGER

THE southern bullfrog was first pronounced a distinct species by Dr. Leonhard Stejneger of the U. S. National Museum in 1902.<sup>1</sup> Miss Dickerson in "The Frog Book" (1906) describes and gives photographs of this southern frog. It has been reported only from Pensacola, Kissimmee and Ozona, in Florida, and from Bay St. Louis, in Mississippi. It is evident that little is known concerning the limits of the range of this frog.

Although the frog was first obtained at Bay St. Louis, Mississippi, it appears to have been known to some of the older naturalists more than a century ago. It is interesting to note that William Bartram appears to have been well acquainted with this frog and considered it distinct from the common bullfrog, *Rana catesbeiana*. This excellent naturalist, on page

<sup>1</sup> "A New Species of Bullfrog from Florida and the Gulf Coast," *Proc. Nat. Museum U. S.*, Vol. 24, pp. 211-215, 1902.

272 of his book, "Travels through North and South Carolina, Georgia, East and West Florida" (1792), says:

The largest frog known in Florida and on the seacoast of Carolina is about eight or nine inches in length from the nose to the extremity of the toes; they are of a dusky brown or black color on the upper side, and their belly or underside is white, spotted and clouded with dusky spots of various size and figure; their legs and thighs also are variegated with dark brown or black; and they are yellow and green about their mouth and lips. They live in wet swamps, on the shores of large rivers and lakes; their voice is loud and hideous, greatly resembling the grunting of swine; but not near as loud as the voice of the bullfrog from Virginia and Pennsylvania: neither do they arrive to half the size, the bullfrog being frequently 18 inches in length and their roaring as loud as that of a bull.

From Bartram's description of the color and markings, one can not say with certainty that he did not confuse the southern bullfrog to some extent with the common bullfrog, which is also known to extend its range into Florida. However, his description of the voice makes it certain that he had heard the frog *Rana Grylio* as named by Stejneger. H. A. ALLARD

WASHINGTON, D. C.,  
April, 1916.

SCIENTIFIC BOOKS

*Outlines of Industrial Chemistry.* By FRANK HALL THORP, Ph.D., with assistance in revision from WARREN K. LEWIS, Ph.D., professor of chemical engineering in the Massachusetts Institute of Technology. Third revised and enlarged edition. Published by the Macmillan Co., New York. Cloth. 8vo. Pp. 665. Price \$3.75.

As the second edition of this well-known text-book appeared in 1905, a material revision of its pages was found necessary and many sections have in consequence been altogether rewritten with elimination of obsolete matter and introduction of new material.

One of the problems which must necessarily present itself to the writer of a one-volume text-book on so extensive a subject as industrial chemistry is to know how to choose the